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ABSTRACT

A study was conducted of three key availability characteristics of material at the University of California (UC), Berkeley library system: (1) status of materials, (2) time required to obtain them, and (3) their location. These characteristics were examined in light of interlibrary loan criteria set forth in a major report on library cooperation by the Audits Division of the California Department of Finance. Circulation data gathered from the libraries of UC, Berkeley and California State University, Sacramento formed the basis for the examination. Using a classification algorithm developed by the Audits Division, it was ascertained that 82 percent of the books in the sample were high-use, while only 13 percent of the sampled books would have been available or eligible for interlibrary loan. It was determined that the highly dedicated delivery system recommended in the auditor's report could not be justified without a substantial revision of the resource sharing criteria. Statistical tables include status and location of materials, and use patterns. (Author/DS)

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ABSTRACT

This study examines three key availability characteristics of materials at the University of California, Berkeley library system: status of materials, time required to obtain them, and their location. It then examines these characteristics in light of interlibrary loan criteria set forth in a major report on library cooperation by the Audits Division of the Department of Finance, State of California. Circulation data gathered from the libraries of UC, Berkeley and California State University, Sacramento form the basis for this examination. Approximately 53% of the books sampled at Berkeley were found on the shelves at the time of the first search. Using a classification algorithm developed by the Audits Division it was ascertained that 82% of the books in the sample were high-use (i.e., circulated at least once every four years during their active lives). Following the criteria for resource sharing suggested in the Auditors Report and given the availability of books in the Berkeley collection only 13% of the sampled books would have been available/eligible for interlibrary loan. It is doubtful that a highly dedicated delivery system such as the one recommended in the Auditors Report could be justified on the basis of the results found in this study without a substantial revision of the resource sharing criteria.

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BACKGROUND AND PURPOSE

How long will it take to get what I want? This is a question that library users frequently ask. Fast access to or quick delivery of library materials will often create a favorable impression concerning the efficiency of library operations. Dissatisfaction, on the other hand, may result when delays occur (i.e., when the desired item is not immediately available).

Within the California system of higher education the issues of quick delivery and improved access have received support on an interinstitutional basis. In its report, Library Cooperation: A Systems Approach to Interinstitutional Resource Utilization, the Audits Division of the California Department of Finance states that the present system of interinstitutional cooperation encourages a "hit-or-miss" mode of operation which effectively limits library users "to materials held on their own campus."[1] In order to facilitate resource sharing between the University of California (UC) system and the California State University and Colleges (CSUC) system the Auditors Report recommends: "The establishment of a quick and efficient interlibrary loan service designed to provide minimum transaction time to the maximum number of patrons. Interlibrary loan routes, designed around a 'regional center,' should service all participating campuses at least once each weekday."[2] Two regional centers are recommended, one located at UC, Berkeley and serving Northern California and the other located at UCLA and serving Southern California. Operationally, the intent is to make available within a twenty-four hour period library materials located at other UC-

CSUC campuses in the same region (i.e., Northern and Southern California).[3]

There are two major assumptions in the recommendations for "a quick and efficient interlibrary loan service:"

1. an effective twenty-four hour turnaround cycle can be implemented
2. requested books will be available in sufficient numbers to warrant a dedicated delivery system.

Aspects of the first assumption have been reported by this author in Interlibrary Loan Turnaround Time: A Study of Performance Characteristics of the University of California, Berkeley Interlibrary Loan Lending Operations.[4] The present study* addresses the availability component of the second assumption.

The principle question is: how available are the library materials in the Berkeley library collection to interlibrary loan borrowers within the UC and CSUC systems? Three indices of availability are utilized:

1. status of material, e.g., on shelf in expected location
2. time required to obtain material
3. location of material

Data pertaining to these indices are presented in the section entitled "Availability States."

The second part of this study will be devoted to an examination of the Book Classification Algorithm developed by the Audits Division

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*This study was originally commissioned by Richard Dougherty, University Librarian at Berkeley, in order to collect data concerning the availability of library materials on the Berkeley campus. The data were to be used to provide general information concerning a range of availability characteristics within the Berkeley library system and to help in the process of examining certain assumptions implicit in the Auditors Report.

in order "to estimate the proportion of high-circulation, low-circulation items" in a library's collection.[5] This statistic is significant since the Auditors Report recommends that high-use library materials should not be made available to interlibrary loan borrowers.[6] The algorithm will be examined in order to determine the effect its use would have on the first index of availability (i.e., the status of materials).

METHODOLOGY

The sampling technique employed in this study conforms explicitly to the approach used in the Auditors Report for the analysis of use patterns (i.e., high, low and no-use). Replication of the Auditors sampling methods is considered appropriate for several reasons:

1. The high degree of confidence with which the sampling technique describes the population parameters. "The governing sample size was to satisfy the condition that there would be a 95 percent chance of the sample statistics being within 5 percent of the population parameters."[7]

2. Their sampling error and measurement error was less than 1.3 percent.

3. The need for comparability in dealing with the Book Classification Algorithm.

4. The high confidence level and the method of sampling - systematic shelflist sampling - permit use of the same sample for both the tests of availability and the examination of the potential effects of the Book Classification Algorithm on the status of library materials at Sacramento and Berkeley.

A.K. Jain in A Statistical Study of Book Use analyzed various methods for obtaining a "collection sample" - a sample of the total collection of the library and the collecting of information on the past usage of books in the sample.[8] He concluded that for his purposes the shelflist sample was the most effective. Jain was especially interested in the comparability of his results with earlier availability studies by Trueswell[9] and Fussler and Simon.[10] Jain like the Auditors chose a systematic rather than a purely random sample.

The library shelflist at CSU Sacramento is used for the base sample. Sacramento is an obvious choice because: (1) it would be a major beneficiary of the quick delivery system; (2) it was sampled by the Auditors in their test of use patterns based on the algorithm; (3) it is one of the few CSUC campuses in the area to keep permanent circulation records (i.e., date-due slips); and (4) geographic proximity - within 75 miles of Berkeley. The sample size is 600. Only monographs and monographic serials are included in the sample. Random number tables are used for the selection of Sacramento's shelflist drawers.[11]

> "The first time a drawer was selected the fourth card from the front was read. If it was a member of the population (i.e., a circulating item which was not a periodical, thesis, gift, map, phonograph record, or art print), it was included in the sample. If it was not a member of the population, the fifth card was read and the same determination made. This process was continued until a member of the population was selected. The second time a drawer was selected, the fourth card from the rear was used. If a drawer was selected a third time, we would start with the twentieth card from the front, etc."[12]

This is done until 600 items are selected.

Using xeroxed copies of the shelflist cards the Sacramento stacks are searched for books whose call numbers match the individual shelflist cards. Circulation data - "a year-by-year account of the frequency of circulation starting with the year of its first circulation"[13] - are recorded from the date-due slips located in each book. When there is evidence that old date-due slips have been removed and replaced by new slips, the book is automatically listed as high use.[14] The circulation file is then checked for all books not found on the shelf at the time

of the first search. If any books still remain unaccounted for, the aid of a library assistant is enlisted in order to search further, e.g., in the bindery file.

After completion of the Sacramento stage of the study the author/title catalog at Berkeley's Doe Library (main graduate library) is checked in order to determine the Berkeley call numbers for the items taken from the Sacramento shelflist. The following information is recorded: (1) whether or not Berkeley owns the book; (2) the call number or numbers for matching books; (3) the call number or numbers for near matches; and (4) the specific location(s) of the book (i.e., Doe Library, Moffitt Library and/or branch libraries). Near matches are earlier or later editions of the items taken from the Sacramento shelflist. For a book to be considered a near match it has to be in the same language and, if special introductions, illustrators or translators are involved, there must be an exact match with these features. Revised editions are not listed as near matches.

Once the call numbers are verified the Doe Library stacks are searched to determine the status of each book and to record the circulation data. In order to locate books not on the shelf, the circulation file, the Richmond storage file and the daily transaction file are checked. If the book is on loan a recall is requested. If the book is in storage it is ordered. Searches are requested for any books still remaining unaccounted for. The next step is to search the branch libraries for (1) those items which are not located in the Doe or Moffitt Libraries and (2) those items which are located in both the Doe Library and the branch libraries but

are not found at the time of the first search of the Doe Library. The same search procedures are used in the branch libraries for determining the status and use patterns of the sample. A log is kept of the dates on which recalls, storage items and searches are requested. This allows one to measure the interval between date of request and either notification of status or delivery of item for the purpose of recording circulation data.

Orr has described the role which this researcher assumes as his ideal. Because we were "interested in testing the capability of a library, not the capability of its users, we could simplify matters by assuming that the users to be simulated were reasonably knowledgeable, and that, if an item were properly shelved, they could find it without wasted effort and with only minimal help from library staff. The simulation, however, should not assume any special knowledge of the particular library being tested, other than what could be learned from its public catalog and from other 'location' tools normally available to users."[15]

This study was conducted within the UC Berkeley and CSU Sacramento library systems during August and September 1973. As of June 30, 1972 Sacramento had library holdings of 412,358 volumes and Berkeley had 3,791,610 volumes.[16]

AVAILABILITY STATES

This section presents the results of the sampling and measurement of three indices of availability: status of material, time required to obtain material and location of material.

Status of material:

The status of materials for Sacramento at the time of the search was as follows:

TABLE 1: Status of Materials - Sacramento

	Number	Percent
Found on the shelf	548	91
Otherwise accounted for	37	5
Unaccounted for	15	4
Total	600	100

Figure 1 gives a breakdown of those books not found on the shelf (i.e., otherwise accounted for and unaccounted for). Approximately one month after the Sacramento stacks had been searched the author received a final status report on the "unaccounted for" category from the Circulation Department staff. The status report indicated that of the 15 "unaccounted for" items:

1. 5 books had been withdrawn from the collection;
2. 2 books had been located;
3. 2 books were in the Processing Department; and
4. 6 books remained unaccounted for.

The 6 books still unaccounted for represent 1% of the total sample (n = 600).

The status of materials for Berkeley at the time of the search was as follows:

TABLE 2: Sacramento Sample - Books Owned and Not Owned by Berkeley

	Number	Percent
Total owned by Berkeley		
Exact matches	402	67
Near matches	53	9
Total not owned by Berkeley	145	24
Total	600	100

TABLE 3: Status of Materials Owned by Berkeley

	Number	Percent
Found on the shelf	319	70
Otherwise accounted for	101	22
Unaccounted for	35	8
Total	455	100

Figure 2 gives a breakdown of all those books owned by Berkeley but not found on the shelf. Among the 35 books unaccounted for at the time of the search a subsequent check on these items revealed that:

1. 2 books were listed as missing;
2. 9 books had been located;
3. 4 books had been incorrectly cited; and
4. 20 books remained unaccounted for.

The 20 books still unaccounted for represent 4 4/10% of the total Berkeley sample (n = 455).

FIGURE 1: Breakdown by Specific Category of Those Books Not Found on the Shelf at Sacramento

n = 52

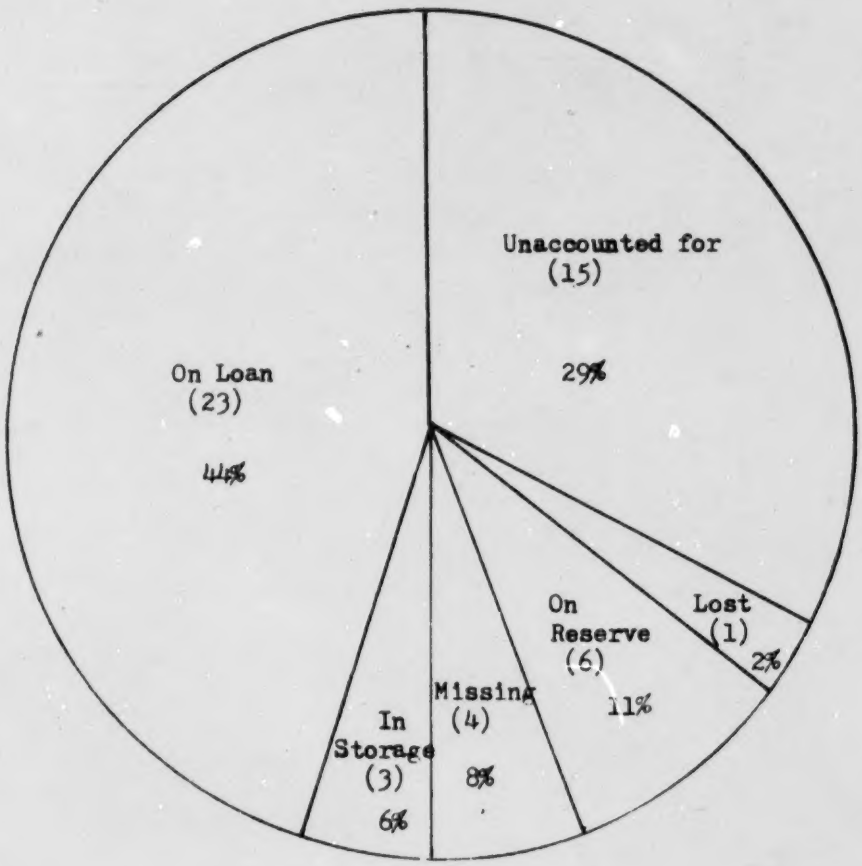
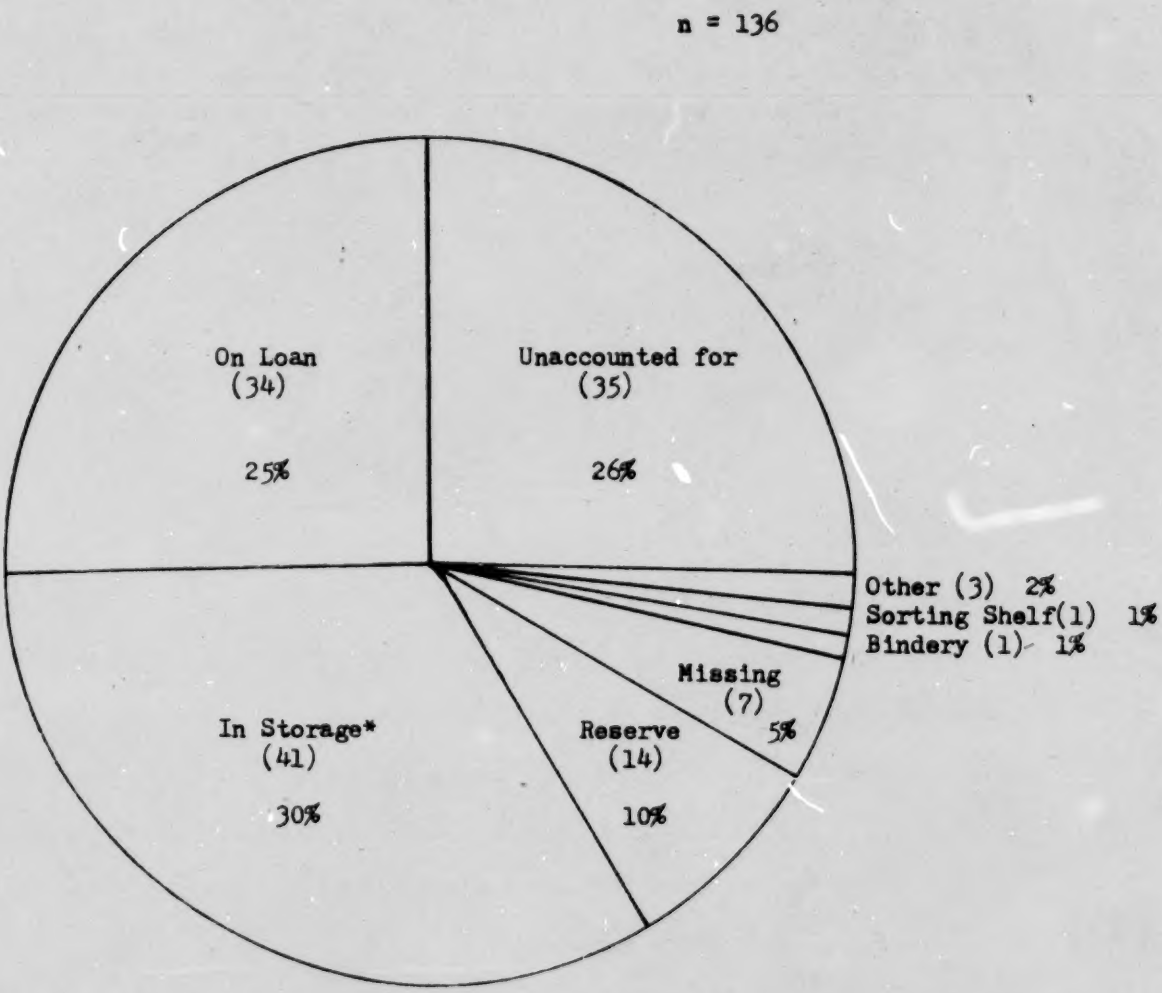


FIGURE 2: Breakdown by Specific Category of Those Books Owned by Berkeley But Not Found on the Shelf



* 15 of the 23 "near match" items not found on the shelf were in storage.

Time required to obtain material:

Table 4 shows the time required at Sacramento and Berkeley to determine the status of sampled material owned by both library systems. The search time includes (a) checking the shelf location, (b) checking the circulation files, and (c) preparing the appropriate request forms (i.e., recall, storage and search requests).

TABLE 4: Time Required to Determine the Status of Sampled Materials Owned by Sacramento and Berkeley

	Number	Time Required	Average Time Required Number
Sacramento	600	12 hrs 15 min	1 min 14 sec
Berkeley	455	29 hrs	3 min 48 sec

The difference in size between the Berkeley collection and the Sacramento collection obviously contributed to the variation in the times required to determine the status of sampled material. Other factors are the number and size of the circulation files, lighting, stack configuration, shelving conditions, and the quality of location devices. An occasional maze-like stack configuration within the main loan stacks of the Doe Library necessitated extended search times for 3 out of 195 "found on the shelf" books (i.e., greater than 10 minutes). Although misshelving was a problem in only 2 verified instances, shelving conditions at Berkeley were not as favorable as those at Sacramento.

Table 5 depicts the average time in days in order to receive notification (1) that books on loan at the time of the first search were now available for pickup, (2) that books requested from storage had arrived, and (3) that books in the "unaccounted for" category had been searched for by Berkeley's Circulation Department staff and a status report on the results of the searches was available. Table 5 is based on a five day work week since none of the relevant services or clerical tasks, e.g., search request processing, are performed on weekends.

TABLE 5: Average Interval in Days to Obtain Either the Books Themselves or Information Concerning Their Status for All Materials in the Sample Requested at Berkeley Via the Recall, Storage, and Search Request Procedures

	Recall	Storage	Search
Number of books requested[1]	32	26	31
Number of books received	13	24	13
Number of days to obtain	13 1/2	1 1/4	6 1/4
Number of requests still outstanding	19	2	18

[1] Only "exact matches" have been included in this table (n = 402).

Approximately 21 hours were spent checking the main author/title catalog for call numbers at Berkeley's Doe Library. Since the total sample size is 600, the average search time for each call number lookup was 2 minutes 6 seconds.

Location of material:

There are two other areas in which the collections at Berkeley and Sacramento differ markedly: (1) branch libraries; and (2) storage facilities. Sacramento has no branch libraries. Eighteen branch libraries are represented in the data for the Berkeley campus. Since the category "checking the shelf location" consisted of the interval from (1) entry to the stack area of the respective library to (2) the expected shelf location of the owned books, travel-time among the libraries at Berkeley was not a factor in the comparison of Table 4. However, one should recognize that if travel-time had been included the total time to obtain a book at the Berkeley libraries would have increased significantly - 32% of the books searched for on the Berkeley campus were only located at branch libraries (144 books out of 455).

A recent study of the Berkeley Interlibrary Loan Lending Department reports that "the need to retrieve materials from Berkeley's branch libraries in order to fill requests increases . . . processing time by 2 days per request . . . . Approximately 18% of all CSUC requests were for materials located in the branch libraries. The percentage for UC requests was 41%."[17] Certainly the geographical diversity of the Berkeley collection creates time delays which centralized library systems are unlikely to experience. Table 6 lists the location(s) by category, e.g., branch libraries only, of the books which appeared as exact matches.

TABLE 6: Location of Materials Which Appeared as Exact Matches in the Berkeley Sample (n = 402)

Location	Number	Percent
Doe Library only	176	44
Branch Libraries only	121	30
Moffitt Library only	4	1
Combination Doe/Branch Libraries	44	11
Combination Doe/Moffitt Library	40	10
Combination Moffitt/Branch Libraries	17	4
Total	402	100

When copies of a book are housed in multiple locations the user frequently benefits. That is, the user, if unable to obtain an item immediately in one location, has the option to go to a second location to ascertain if the desired item is on hand there. Table 7 lists the frequency with which items in the sample were located in one or more Berkeley libraries. The second column of Table 7 is adjusted to exclude the Moffitt Library. Interlibrary lending regulations do not permit withdrawal of materials from Moffitt (Main Undergraduate Library) except in the case of UC borrowers. The collection is classified as high-use.

Table 8 compares how the location of the books in the sample affected the extent to which they were found on the shelf. Table 9 shows the breakdown by category, e.g., Missing, and location of those books not found on the shelf.

TABLE 7: Frequency of Locations for Sampled Materials Located on the Berkeley Campus

Number of Locations	Number of Books[1]	Number of Books Less Moffitt Library[2]
1	274	317
2	82	50
3	33	25
4	7	1
5	4	4
6	1	0
7	1	1
Total	402	398

[1] Exact matches only.

[2] Only 4 books were unique to the Moffitt collection.

Berkeley has a far greater proportion of its holdings in storage than Sacramento. This is reflected in the sample (i.e., Berkeley had 26 of its exact matches in storage - 15 near matches were in storage - whereas Sacramento had 3 in-storage books). See Table 5 for the average time required to receive a book from storage at Berkeley. The card catalog at Berkeley does not identify whether or not a book is in storage. As a result, one must first go to the loan stacks and search for the desired item. Not finding the item one then goes to the Circulation Desk in order to request further information concerning the status of the item. At this time one finds out that the book is in storage. Materials in storage at Sacramento are so designated in the card catalog.

TABLE 8: Breakdown by Location of Materials Found on Shelf/Not Found on Shelf at Berkeley

LOCATION	Found on Shelf[1]		Not Found on Shelf		Total	
	Number	Percent	Number	Percent	Number	Percent
Doe						
Main Loan Stacks	198	67	96	33	294	100
Other[2]	14	78	4	22	18	100
Branch Libraries	107	75	36	25	143	100
Total	319	70	136	30	455	100

[1] Found on Shelf includes Library Use Only and Non-Circulating books. The Bancroft Library, Law Library, Humanities Graduate Service and the Art History/Classics Seminar Room had a combined total of 12 such books held in their stack areas.

[2] "Other" includes all those locations cited in the previous note as well as the Moffitt Library (4 books).

TABLE 9: Breakdown by Location of Materials Not Found on Shelf at Berkeley

LOCATION	Not Found on Shelf						
	On Loan	Storage	Missing	Reserve	Unaccounted for	Other	Total
Doe							
Main Loan Stacks	26	39	3	-	27	1	96
Other[1]	1	-	1	1	1	-	4
Branch Libraries	7	2	3	13	7	4	36
Total	34	41	7	14	35	5	136

[1] "Other" includes the Bancroft Library, Law Library, Humanities Graduate Service and the Art History/ Classics Seminar Room as well as the Moffitt Library (Main Undergraduate Library).

BOOK CLASSIFICATION ALGORITHM

How would the Book Classification Algorithm utilized in the Auditors Report affect the status of materials on the Berkeley campus? The Auditors propose the algorithm as a means by which interlibrary loan departments could determine whether or not a particular book was high-use, low-use or no-use. High-use books would not be subject to interlibrary lending, since one of the criteria established by the Auditors is that access to individual collections should not create a queue for individual items. High-use "might" create such a queue. Accordingly, resource sharing would include only those materials which fall into the low or no-use categories as determined by the lending library upon examination of the requested book's circulation record.[18]

Circulation data collected from the date-due slips of books sampled at Sacramento and Berkeley allow us to establish use patterns based on the Auditors algorithm (see Appendix 1 for the Auditors algorithm). Only those books for which circulation data existed at both Sacramento and Berkeley are included. High-use books are those which have circulated at least once every four years during their active lives.

TABLE 10: Use Patterns at Berkeley and Sacramento Developed According to the Auditors Algorithm

Berkeley

	Number	Percent
High-use	326	83
Low-use	33	8
No-use	34	9
Total	393	100

Sacramento

	Number	Percent
High-use	229	58
Low-use	56	14
No-use	108	28
Total	393	100

The Auditors algorithm was also applied against the total Sacramento sample for which circulation data exist (n = 582) in order to determine if there was any significant variance between it and the subset owned by both Berkeley and Sacramento. As Table 16 in Appendix 2 shows there is little variance. Table 17 in the same Appendix is a comparison to determine if the Auditors findings with their Sacramento sample are replicated in the current study. The results tend to confirm the replicability of the sampling technique.

If one accepts the Auditors recommendation that high-use books are not to be subject to interlibrary lending, then only 17% of the Sacramento sample owned by Berkeley would be eligible for lending. This factor might have little impact on resource sharing if the bulk of interlibrary loan requests is for low or no-use materials - a basic assumption of the Auditors. Nozik in her study, The Use Status of Books Requested from the University of California, Berkeley, Inter-Library Loan, questioned the validity of this assumption:

> The validity of the assumption: that those documents which are requested from a University of California (UC) library by the California State University and Colleges (CSUC) campuses through inter-library loan are the "low-use" items, according to the in-house circulation statistics of the lending institution was tested. This was one of the assumptions from the California State Audits Division analysis of the opportunities for increasing UC-CSUC library cooperation. However, approximately 57% of the CSUC requested material had "high use" status on the UCB home campus.[19]

Of the 393 books in the sample owned by both Sacramento and Berkeley and for which circulation data existed 14 books could be identified from the date-due slip as having been out on interlibrary loan. Per the Auditors algorithm 12 of these were high-use and 2 were low-use. Although the sample of 14 is too small to make valid inferences concerning the total collection the direction is similar to that predicted by Nozik.

Thompson in a similar replication of the Auditors study sampled 381 books at CSU Sonoma. He applied the Auditors algorithm to his data.[20] The results are surprisingly similar to those use patterns found at Sacramento (see Table 10).

		Percent
Sonoma	High-use	58
	Low-use	12
	No-use	30

If the use patterns of the CSUC sample of 2 campuses seem to cluster around the 60 - 10 - 30 range, then the same cannot be said for Berkeley. Collection use at the Berkeley campus is greater with considerably fewer no-use books. Thompson's study indicates the same pattern.[21]

TABLE 11: Thompson's Pattern of Collection Use - Berkeley - Auditors Algorithm

	Number	Percent
High-use	343	90.0
Low-use	17	4.5
No-use	21	5.5
Total	381	100.0

The Auditors viewed their algorithm as a tool for determining efficiency of use and as a means of allocating resources, e.g., via interlibrary loan. Unfortunately, as indicated in the current study and as confirmed in Thompson's study the algorithm would, in practice, seriously undermine attempts to improve resource allocation among the UC and CSUC campuses. The dilemma occurs because of two seemingly compatible criteria. First, quoting from the Auditors Report, "increased cooperation is considered desirable . . . if libraries can provide access to specified portions of their collections without creating a queue for these materials."[22]

The second criteria would bar all UC and CSUC libraries from purchasing low-use books unless the library had been assigned specific collection development responsibilities. ". . . An individual library need only maintain a more modest collection and could rely upon the subject specialist for low-use items."[23] The result is a class of books which can neither be borrowed through interlibrary loan (i.e., high-use) nor purchased (i.e., low-use). This position is quite awkward. A trivariate distribution of the Berkeley-Sacramento use patterns uncovers the extent of the dilemma (see Table 14). The following table breaks out the data in a simplified manner.

TABLE 12: Depiction of a Dilemma - Number of Books Unobtainable by Sacramento from Berkeley via Interlibrary Loan and Cannot Be Purchased

Low-use Sacramento[1]	Cannot be purchased	164 Books
Low-use Sacramento High-use Berkeley	Cannot be loaned	116 Books
Low-use Sacramento Low-use Berkeley	Can be loaned	48 Books

[1] No-use books are included in the low-use category.

The above dilemma would preclude Sacramento from obtaining 30 percent of the total books sampled (i.e., 116 out of 393 books owned by both Berkeley and Sacramento).

Thompson's results are even more dissuading:

TABLE 13: Another Depiction - Same Dilemma Applied to Thompson's Sonoma Collection

Low-use Sonoma	Cannot be purchased	160 Books
Low-use Sonoma High-use Berkeley	Cannot be loaned	129 Books
Low-use Sonoma Low-use Berkeley	Can be loaned	31 Books

Sonoma would be precluded from obtaining 34 percent of the total books sampled (i.e., 129 out of 381 books owned by both Berkeley and Sonoma).[24]

It should be noted that the algorithm used in both the Thompson study and the present study was used in the Auditors Draft Report but was modified slightly in the Final Report. The change made the algorithm more conservative (i.e., more biased in favor of the high-use category).

TABLE 14: Tri-Variate Distribution of Collection Use (High, Low and No-Use) - Berkeley and Sacramento - Auditors Algorithm

(n = 393)

BERKELEY

		High-use		Low-use		No-use		Total	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent
	High-use	210	53	13	3	6	2	229	58
SACRAMENTO	Low-use	45	11	4	1	7	2	56	14
	No-use	71	18	16	4	21	5	108	27
	Total	326	82	33	8	34	9	393	99

DISCUSSION

This study was commissioned in order to provide answers to certain questions. How available are library books at the University of California, Berkeley? What are their use patterns? The answers are the data, yet the real benefit of the data will be their utility in aiding the problem solving and decision making process. Is it enough to say "70 percent of the Berkeley books sampled were found on the shelf" or "83 percent were high-use"? The data can stand on their own. Yet the framework, the context for analysis, is missing.

On an historical level the findings here are compatible with other research reports on use patterns and availability. For example, the Auditors found 56% of the books sampled at Sacramento to be high-use.[25] The present findings are comparable - 60% are high-use with n = 582. Thompson found 90% of the books he sampled at Berkeley to be high-use. The present findings show an 83% high-use rate at Berkeley. During 1971-72 Berkeley filled 72% of all interlibrary loan requests from the CSUC campuses in Northern California.[26] Berkeley would have been able to deliver approximately 71% of the books in the current sample to UC-CSUC interlibrary loan borrowers.

TABLE 15: Breakdown of the Availability to Intercampus Borrowers of the Sampled Books at Berkeley

	Number	Percent
Found on the shelf	319	53
Not immediately available, e.g., in storage	107	18
Do not own	145	24
Unavailable, e.g., missing	9	2
Unaccounted for	20	3
Total	600	100

Jain sampled availability in the Dewey classification range 370-379 (Education) at the Purdue University Library. He found 65.4% of all books on the shelf. Jain states, "The estimate of availability on shelves is quite close to the of Trueswell (1964)."[27] Jain's unaccounted for books (i.e., Not Traceable) were quite high at Purdue - 18.5 percent. Unaccounted for at Berkeley was 3 percent. Meier reported a 5 % unaccounted for rate in his study "Information input overload."[28] Meier also found that 32.3% of all books not immediately available were on loan. Burnett in a 1966 study at the University of Durham found 34% of the not immediately available books on loan.[29] At Berkeley 25% were on loan.

The use patterns at Berkeley and the time required to obtain materials are significantly greater than those at Sacramento. The

correlation between use and time is not unexpected. Meier calculated that the time spent per title obtained increased as the library operated at a higher capacity.[30]

The results of this study indicate that among the sampled items owned by Berkeley a majority qualify as high-use (i.e., 326 or 82%). Acceptance of the Auditors algorithm as an instrument for determining eligibility for interlibrary loan means that the 326 high-use books could not be loaned to other UC-CSUC campuses - given the non-queue criteria. Indeed, the total number of books from the original sample of 600 that would be available at Berkeley for interlibrary loan is 78 or 13% of the sample. If one only includes the books immediately available (i.e., found on the shelf), then the percentage drops to less than 10 percent. Based on the sample alone it does not appear that the implicit criteria of "sufficient numbers to warrant a dedicated delivery system" would be met. Of course, university and library policy makers could decide that an "immediately available" rate in the range of 10-20% is justified in terms of perceived benefits.

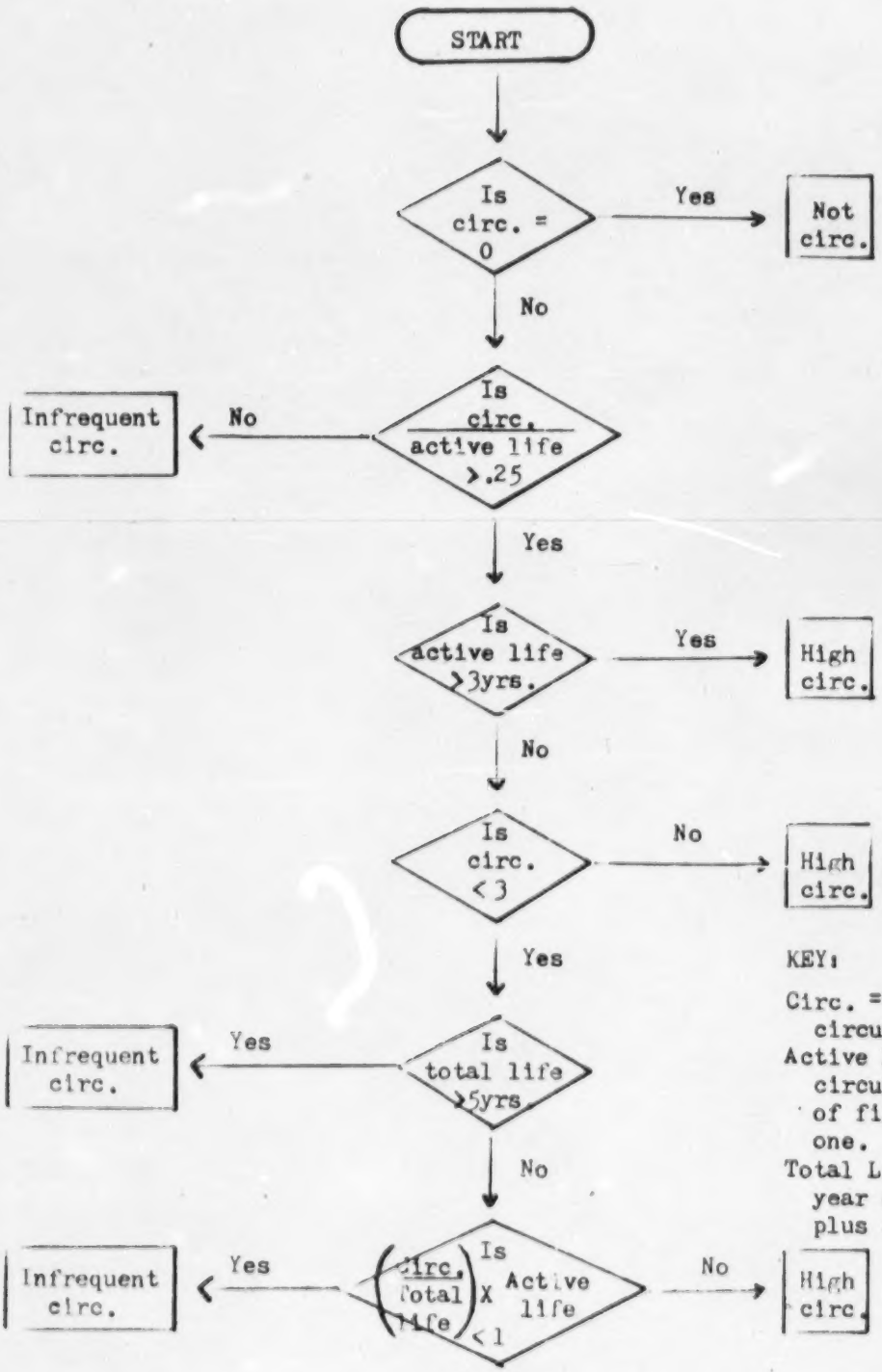
Several additional factors might be considered in this context. First, a shelflist sample of the Berkeley collection is unlikely to reveal use patterns as high as those which were derived by using the Sacramento sample.[31] Second, alternative algorithms could be constructed which would increase the number of eligible interlibrary loan materials; the use of algorithms as instruments for determining eligibility could

be rejected; or the criteria of no queueing could be set aside. Each of these steps would negate to varying degrees the deleterious effects of the Auditors algorithm. Certainly the "cannot purchase - cannot loan" dilemma discussed on page 24 should be resolved.

The extent to which local users might be inconvenienced in order to improve the access of individuals on other UC-CSUC campuses cannot be ignored. Library cooperation, if one assumes a willingness to cooperate rather than some form of coercive resource sharing, would suggest mutual benefits. From this perspective it would appear that a total rejection of the non-queue guideline might unduly handicap local users under the system of resource sharing envisioned by the Auditors. Urquhart and Schofield found that "nearly all the reader failure at the shelf is caused by other readers using the books rather than by incorrect use of the library by the reader."[32] Certainly no one would encourage a system of sharing in which "extensive" reader failure at home is the sacrifice one must make to improve access elsewhere. At the same time interlibrary lending criteria should not be so restrictive as to discourage the growth of an effective UC-CSUC resource sharing network.

APPENDIX 1

BOOK CLASSIFICATION ALGORITHM



KEY:

Circ. = all recorded circulations.
Active Life = YR of last circulation minus year of first circulation, plus one.
Total Life = 1972 minus year of first circulation, plus one.

APPENDIX 2

The Auditors algorithm was applied against the total Sacramento sample for which circulation data exist (n = 582) in order to determine if there was any significant variation between it and the subset owned by both Berkeley and Sacramento. As the following table shows the total variation was slight.

TABLE 16: Use Patterns for Total Sacramento Sample

	Number	Percent
High-use	347	60
Low-use	73	12
No-use	162	28
Total	582	100

Another comparison was made to determine if the Auditors findings with the Sacramento sample are replicated in the current study. The Auditors algorithm was used in both instances.[33]

TABLE 17: Use Patterns at Sacramento: A Percentage Comparison of Present Findings with the Auditors Findings

	Present Findings Percent	Auditors Findings Percent
High-use	60	56
Low-use	12	15
No-use	28	29
Total	100	100

The results tend to confirm the replicability of the sampling technique. It is interesting to note that in revising their algorithm for the Final Report the Auditors made it more conservative. Using this algorithm the Sacramento percent figures are: high-use (62%) and low-use (8%).[34]

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13. Library Cooperation, p. 25.

14. This procedure is deemed appropriate since there is an extremely low probability (given the Auditors algorithm) that any book with a full date-due slip would not qualify as high-use (i.e., circulate at least once every four years during its active life).

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22. Library Cooperation, p. 13.

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26. Martell, p. 22.

27. Jain, p. 194.

28. Meier, Richard L. "Information input overload: features of growth in communication-oriented institutions." Libri 13 (1963): 1-44.

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31. The Auditors note that in their study utilizing the algorithm: "Circulation studies . . . at three campuses indicate that . . . 55 percent of the UC collection circulates less than once every four years during the active lives of these materials" (i.e., 55 percent are low and no-use). Although Berkeley was not among the three campuses studied (Irvine, Santa Barbara and UCLA) its holdings would be more comparable to the collections on the UC campuses than to Sacramento's. Library Cooperation, p. xiv.

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RECENT ILR PUBLICATIONS

Publication of papers and reports of interest to scholars and practitioners in the field of library and information science is an important function of the Institute of Library Research. In addition to this study, the following have been published recently by ILR:

ILR-73-001 Todd, Judy, Summary Report of Student Studies of the Subject Headings Used in the University of California, Berkeley Subject Catalog (July 1973) 8 pp. (ERIC No. ED-082 775)

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